

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number
WO 2005/074619 A2

(51) International Patent Classification: Not classified

(21) International Application Number:
PCT/US2005/003305

(22) International Filing Date: 3 February 2005 (03.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/541,073 3 February 2004 (03.02.2004) US

(71) Applicant (for all designated States except US): MASSACHUSETTS GENERAL HOSPITAL [US/US]; Suite 5036, 149 13th Street, Charlestown, MA 02129 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MURATOGLU, Orhun, K. [TR/US]; 5 Dana Street, Cambridge, MA 02138 (US). ORAL, Ebru [TR/US]; Apt. 3, 11 Belmont Square, Somerville, MA 02143 (US).

(74) Agents: ISACSON, John, P. et al.; Heller Ehrman White & McAuliffe LLP, Suite 300, 1666 K Street, NW, Washington, DC 20006-1228 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

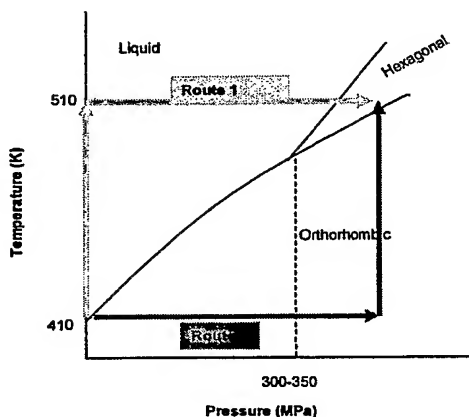
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HIGHLY CRYSTALLINE CROSS-LINKED OXIDATION-RESISTANT POLYETHYLENE



(57) Abstract: The present invention relates to methods for making highly crystalline cross-linked polymeric material, for example, highly crystalline cross-linked ultra-high molecular weight polyethylene (UHMWPE). The invention also provides methods of making antioxidant-doped highly crystalline cross-linked polymeric material using high pressure and high temperature crystallization processes, medical implants made thereof, and materials used therein.